

PENDING CLAIMS

1. (Twice Amended) An isolated receptor recognition factor (RRF), Stat3, having the amino acid sequence of SEQ ID NO:12.
97. An isolated receptor recognition factor (RRF) that has the following characteristics:
 - (a) it is cytoplasmic in origin;
 - (b) it is activated by tyrosine phosphorylation; and
 - (c) upon activation the RRF is translocated to the nucleus of a target cell; andwherein the RRF is encoded by a recombinant DNA molecule that hybridizes under standard hybridization conditions of 5X SSC and 65 °C to a nucleic acid complementary to a DNA sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, and SEQ ID NO:11.
98. The isolated RRF of Claim 97 wherein the RRF is encoded by a nucleic acid complementary to the DNA sequence of SEQ ID NO:3.
99. The isolated RRF of Claim 98 that has the amino acid sequence of SEQ ID NO:4
100. The isolated RRF of Claim 97 wherein the nucleic acid is complementary to the DNA sequence of SEQ ID NO:1.
101. The isolated RRF of Claim 100 that has the amino acid sequence of SEQ ID NO:2
102. The isolated RRF of Claim 97 wherein the nucleic acid is complementary to the DNA sequence of SEQ ID NO:5.
103. The isolated RRF of Claim 102 that has the amino acid sequence of SEQ ID NO:6
104. The isolated RRF of Claim 97 wherein the nucleic acid is complementary to the DNA sequence of SEQ ID NO:7.

105. The isolated RRF of Claim 104 that has the amino acid sequence of SEQ ID NO:8
106. The isolated RRF of Claim 97 wherein the nucleic acid is complementary to the DNA sequence of SEQ ID NO:9.
107. The isolated RRF of Claim 106 that has the amino acid sequence of SEQ ID NO:10.
108. The isolated RRF of Claim 97 wherein the nucleic acid is complementary to the DNA sequence of SEQ ID NO:11.
109. The isolated RRF of Claim 108 that has the amino acid sequence of SEQ ID NO:12.
110. An isolated receptor recognition factor (RRF) encoded by a recombinant DNA, wherein the recombinant DNA molecule hybridizes under standard hybridization conditions of 5X SSC and 65°C to a nucleic acid complementary to the nucleotide sequence of SEQ ID NO:11; wherein said RRF comprises a tyrosyl residue that is phosphorylated when said polypeptide is expressed in a cell treated with IL-6; wherein when said cell expresses a protein having the amino acid sequence of SEQ ID NO:12 said protein is phosphorylated in response to IL-6 treatment.
111. An immunogenic fragment of an isolated receptor recognition factor (RRF), Stat3, having the amino acid sequence of SEQ ID NO:12.
112. A fusion protein comprising the immunogenic fragment of Claim 111.
113. The fusion protein of Claim 112 which further comprises GST.
114. An isolated fragment of a recognition factor (RRF) comprising 40 amino acids of SEQ ID NO:12.
115. The isolated fragment of Claim 114 wherein the 40 amino acids of SEQ ID NO:12 are amino acids 688 to 727.

- 116. A fusion protein comprising the isolated fragment of Claim 115.
- 117. The fusion protein of Claim 116 which further comprises GST.
- 118. A fusion protein comprising the isolated fragment of Claim 114.
- 119. The fusion protein of Claim 118 which further comprises GST.